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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/823,136	04/13/2004	Lucas M. O'Gary	59095US002	4530
32692	7590	04/26/2006		
3M INNOVATIVE PROPERTIES COMPANY PO BOX 33427 ST. PAUL, MN 55133-3427				
			EXAMINER MARCHESCHI, MICHAEL A	
			ART UNIT 1755	PAPER NUMBER
DATE MAILED: 04/26/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/823,136

Applicant(s)

O'GARY ET AL.

Examiner

Michael A. Marcheschi

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 April 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25, 28 and 29 is/are rejected.
- 7) ☒ Claim(s) 26 and 27 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

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The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim 15 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 15 defines the height as “at least 0.5 mm” but the specification defines the height as “about 0.5 mm **to about 5 mm (page 7, lines 18-19)**, thus a discrepancy is apparent between the claim and the disclosure (disclosure defines an upper limit not claimed). In view of this, the examiner is unclear as to which is correct.

The indicated allowability of claim 18 as being allowable is withdrawn after further consideration of Braun et al. (5,753,343), cited by applicant on 10/4/04. Rejections based on this reference, as the primary reference, are defined below.

Claims 26 and 27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art of records fails to teach or suggest these features.

Claims 1-18, 21-24 and 28-29 are rejected under 35 U.S.C. 103(a) as obvious over Braun et al. (343) in view of Lux.

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Braun et al. teaches in the abstract, figure 12 and column 9, lines 35-50, a nonwoven article comprising a nonwoven substrate having first and second surfaces, wherein the first and second surfaces defines a plurality of peaks and valleys (corrugated) having a height as defined. Abrasive particles can be attached to the fibers of the nonwoven web (column 9, lines 35-39). Figure 12 shows that the web can be a composite of 2 or more corrugated layers. A second substrate is attached to the nonwoven substrate, the second substrate being a fabric or other porous sheet like materials.

Lux teaches in column 4, line 55-column 5, line 20, column 6, lines 2-5, column 8, lines 55-57 and column 10, lines 20-25, various thickness known for nonwovens, as well as abrasive sizes. The reference also defines that abrasive coatings on nonwoven webs are conventional in order to impart the desired abrasive character to the nonwoven article. The reference further defines that the use of a make coat/size coat is a conventional way to apply an abrasive coating.

The primary teaches a similar structure as defined in instant claim 1, with the exception of the abrasive coating (abrasive/binder mixture). This reference, however, teaches that abrasive particles can be attached to the fibers of the nonwoven web, thus implying that the surface of the nonwoven web has an abrasive character. Although this reference does not specifically teach the application of an abrasive/binder mixture to coat the nonwoven material, it is the examiners position that one skilled in the art would have found the application of an abrasive/binder mixture to the nonwoven web according to the primary reference obvious motivated by the fact that the primary reference implies that the nonwoven web has an abrasive surface and that the secondary reference teaches a conventional way to make the surface of a nonwoven web have an abrasive character. The examiner acknowledges that the primary reference teaches the

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application of abrasive particles, only, however, it is the examiners position that the application of abrasive particles by way of using a binder is obvious in order to optimize the bonding of the abrasive particles to the web. With respect to the thickness values of claims 2, 3 and 16, although the thickness is not defined for the broad substrate (the thickness is apparently intended in the definition of a "nonwoven" as set forth on page 5, lines 25+ of the instant specification), the substrate of this reference has a thickness and it is the examiners position that one skilled in the art would have appreciated that the desired thickness would be apparent from conventional thickness values for nonwovens that are made into abrasive articles. In other words, the use of a nonwoven (known for abrasive articles) having a conventional thickness, as clearly shown by Lux, is clearly within the scope of, and/or would have been appreciated by, the skilled artisan absent evidence of criticality. With respect to the "thickness variation", as can be seen from the figures of primary reference, the thickness is relatively constant. In view of this, claims 1-8, 15-16 and 28 are met. With respect to claim 9, the teaching that particles can be adhered to the fibers, broadly implies the abrasive can be present on the fibers which constitute the first and second side of the web absent evidence to the contrary. In addition, it is the examiners position that if one skilled in the art desired a nonwoven article that can be used on both surfaces (i.e. abrasive action on both surface), one skilled in the art would have known that to accomplish this, both sides need to be coated with an abrasive. With respect to claims 10 and 12, the primary reference teaches this limitation. With respect to claim 11, the primary reference teaches that a second substrate is attached to the first substrate, the second substrate being a porous sheet like materials and sponge can be broadly considered to be a porous sheet like material. With respect to the abrasive size (claims 13-14), with the combination, being obvious as defined above, one

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skilled in the art would have found it obvious to use any known conventional abrasive size, such as the size defined by Lux (i.e. the grade defined corresponds to the sizes within the claimed range), as the abrasive particles size according to the primary reference because this abrasive particles size is conventionally known to provide the necessary abrasive character to nonwovens.

With respect to claims 17-18, the figures clearly depict these limitations.

With respect to the method claims 21-25, the primary reference, as combined with the secondary reference above, makes the application of an abrasive/binder slurry an obvious way to form the abrasive coating on the nonwoven according to the primary reference. In other words, Lux teaches conventional ways to apply abrasive particles (primary reference states that abrasive particles can be adhered to the nonwoven) and it is the examiners position that one skilled in the art would have appreciated and found these conventional application techniques obvious as the way to adhere the particles defined by the primary reference. With respect to claim 29, as can be seen from the figures of primary reference, the thickness is relatively constant.

Claim 19 is rejected under 35 U.S.C. 103(a) as obvious over Braun et al. in view of Lux, as applied to claim 1 above and further in view of Nollen et al.

Nollen et al. teaches in column 6, lines 61-68 that enhancement of the physical properties of a non woven article is accomplished by incorporating a reinforcing scrim with said nonwoven.

The use of a reinforcing scrim with the nonwoven according to the primary reference would have been obvious because it is the examiners position that one skilled in the art would have appreciated that physical properties (i.e. tear strength (tensile strength (tensile properties), puncture resistance etc.) of the nonwoven can be can optimized by using a reinforcing scrim, this

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concept being clearly disclosed by Nollen et al. In view of this, since the optimization of tear strength and puncture resistance are beneficial property in abrasive articles, one skilled in the art would have been motivated to incorporate any known mechanism to optimize said properties.

Claim 20 is rejected under 35 U.S.C. 103(a) as obvious over Braun et al. in view of Lux and Nollen et al. as applied to claim 19 above and further in view of Braunschweig et al.

Braunschweig et al. discloses in the abstract that a conventional way to reinforce a substrate is to incorporate a reinforcing material within the substrate.

Although the scrim might not be defined as being incorporated in the nonwoven, but otherwise attached to the surface (as depicted by Nollen et al.), it is the examiners position that one skilled in the art would have found the incorporation of the scrim obvious by any technique. Since it is clearly known to incorporate a reinforcing material within a substrate, as is clearly shown by Braunschweig et al., one skilled artisan would have appreciated that the scrim according to the Braun et al. in view of Lux and Nollen et al. could be incorporated within the substrate. The examiner acknowledges that Braunschweig et al. is not directed to nonwovens, however, this reference is being applied to show conventional ways of reinforcing substrate (irrespective of what the substrate is). Finally, it is the examiners position that the skilled artisan would have appreciated that one known reinforcing technique for one type of substrate could be applied to other substrates absent evidence to the contrary.

Claim 25 is rejected under 35 U.S.C. 103(a) as obvious over Braun et al. in view of Lux, as applied to claim 24 above and further in view of King.

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King et al. teaches known conventional methods to coat a substrate with an abrasive. One method being the use of a slurry coating with a size coating thereon.

As defined above, the method of claim 24 is defined by the Braun et al. in view of Lux. The combination, however, fails to teach the use of a size coating over the slurry coat. It is the examiners position that the use of a size coating over the slurry coating would have been within the scope of the skilled artisan in order to structurally reinforce the bond of abrasive particles. In other words, 2 bonds are better than one, the second bond being a result of the size coating. King clearly states that size coats are known to be applied over slurry coating in the formation of coated abrasives.

Applicant's arguments with respect to all the claims have been considered but are moot in view of the new ground(s) of rejection.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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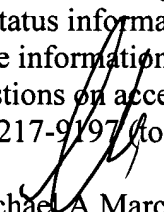
CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael A. Marcheschi whose telephone number is (571) 272-1374. The examiner can normally be reached on M-F (8:00-5:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on (571) 272-1233. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

4/06
MM


Michael A Marcheschi
Primary Examiner
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